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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,807	03/31/2000	Geoffrey J Woolfe	79424DMW	3616

1333 7590 03/12/2004

PATENT LEGAL STAFF  
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EXAMINER
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VIDA, MELANIE M

ART UNIT	PAPER NUMBER
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2626

DATE MAILED: 03/12/2004

8

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/540,807

Applicant(s)

WOOLFE ET AL.

Examiner

Melanie M Vida

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-13, 15-18, 21-27 and 29-32 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 14, 19, 20, 28, 33 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5,7.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement(s) (IDS) submitted on 3/31/00 and 7/26/01 have been considered by the examiner and is attached to this office action.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-4, 7-13, 15-18, 21-27, 29-32** are rejected under 35 U.S.C. 102(b) as being anticipated by Bone et al. WO 96/29829, (hereinafter, Bone).

Regarding, **claim 1**, Bone teaches a method of predicting the original colour of an image pixel in the roll-off area from the observed colour and to recover the original colour in the production of the composite image, which reads on “a method of transforming a file of digital color data representing a color image to a new file of digital color data where one or more new color locations where their reproduction is known to be preferred”, (page 13, lines 11 and 18-20). Further, the embodiments’ data relate to color pixels operating in a three-dimensional space, which reads on “(a) providing the digital color data in a multi-dimensional color space”, (page 13, lines 1-3; and line 21). A user can selectively define a rejection galaxy and acceptance galaxy, to define all the key colours occurring in the background and foreground of an image, which reads on “(b) specifying one or more preferred color locations in the color space as one or more color magnets”, (page 12, lines 1-7). A user can select a tolerance for the rejection clip

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value or the acceptance clip value, which reads on “, wherein each color magnet has a predetermined region of influence”, (page 11, lines 22-23). The distances between the colour value point (62) in figure 9a, and the closest rejection point (30<sub>1</sub>) and closest acceptance point (40<sub>1</sub>) is determined (step 107), which reads on “(c) calculating color space distance between one or more color locations of the digital color data in the color space and one or more of the color magnets”, (page 14, lines 5-9). As shown in figure 10b, an interpolation technique assumes an original colour lies along a line segment connecting the closest accept colour 40<sub>1</sub> and the observed colour 62, where a key value=0 implies that the sampled pixel value (62) is replaced by the original colour 40<sub>1</sub>, a key-value of 0.5 implies that the original colour value lies half-way between (62) and 42<sub>1</sub>, and a key value of 1 implies the original colour and the observed colour are coincident, which reads on “(d) prescribing a particular activity for each color magnet that affects color locations in the color space within the region of influence of each color magnet;”, (page 16, lines 18-26). The extrapolated predicted original colour value  $x_e$  (62') located at a distance from the observed colour value (62) and the predicted original color interpolation value  $y_{il}$  is located at a distance from the nearest acceptance point (40<sub>1</sub>), such that the composite image (steps 196, 198) is formed by adjusting the color values to recover the predicted original colour as shown in figures 8, 10a, and 10c, which reads on “(e) mapping the digital color data to or toward new locations in the multi-dimensional color space as a function of the color space distance and the activity, wherein the degree or strength of activity is a function of at least the color space distance or direction in color space”, (page 17, lines 1-18; page 17, line 26 through page 18, line 1).

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Regarding, **claim 2**, Bone illustrates in figure 3, an acceptance galaxy (44), and a rejection galaxy (34), and a region in between as the roll-off, which reads on “wherein said activity specified in step (d) includes at least one activity selected from the group including attraction, repulsion, shielding, and dragging”, (page 11, lines 13-15).

Regarding, **claim 3**, Bone discloses in the background of the invention, that image colour values falling within the acceptance area are accepted in the matte, which reads on “the activity of attraction the color magnet attracts colors to or toward itself”, (page 2, line 1).

Regarding, **claim 4**, Bone discloses in the background of the invention that image colours falling within the rejection area are rejected from the matte, which reads on “the activity of repulsion the color magnet repels colors from itself”, (page 1, line 26-27).

Regarding, **claim 7**, Bone teaches of four acceptance points (40<sub>1</sub>, 40<sub>2</sub>, 40<sub>3</sub>, 40<sub>4</sub>), which reads on “the preferred color location is selected from the group including a point, a line, plane, or cylinder in the color space”, (page 12, lines 26-27).

Regarding, **claim 8**, Bone discloses “keying” any number of defined rejection galaxies or acceptance galaxies that occur in a foreground or backdrop of an image for the ultimate purpose of image compositing, which reads on “the preferred color location is known to a viewer of the color image to be preferably reproduced in a particular accurate colorimetric manner relative to other renderings of that color”, (page 12, lines 3-7).

Regarding, **claim 9**, Bone states that of image compositing with a desired background of the view of city buildings, and the desired foreground as a person of normal size, which reads on “wherein the preferred color location includes at least one of sky, foliage, and skin tones, (page 1, lines 14-24).

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Regarding, **claim 10**, luminance is defined as being the value:  $(0.299 \text{ Red} + 0.587 \text{ Green} + 0.114 \text{ Blue})$  of an RGB colour value, which reads on “the multidimensional color space is CIELab/CIELCH color space”, (page 18, lines 3-7).

Regarding, **claims 11-12**, please refer to the corresponding rejection in claim 10, and further the step of compensating luminance in figure 8, (step 194).

Regarding, **claim 13**, Bone illustrates equations for  $r_n$  and  $a_n$ , for the  $x_n, y_n$  dimension, which reads on “introduces anistropic behavior into the calculation of color space distance by allowing for separate weightings in one or more of the dimensions of the multi-dimensional color space”, (page 14, lines 16-19).

Regarding, **claim 15**, please refer to the corresponding rejection in claim 1, and further where Bone illustrates a CPU (54) in figure 5, a block diagram of the hardware system, which reads on “a computer program product”, (page 12, line 8 and lines 16-19).

Regarding, **claims 16 and 30**, please refer to the corresponding rejection in claim 2.

Regarding, **claims 17 and 31**, please refer to the corresponding rejection in claim 3.

Regarding, **claims 18 and 32**, please refer to the corresponding rejection in claim 4.

Regarding, **claim 21**, please refer to the corresponding rejection in claim 7.

Regarding, **claim 22**, please refer to the corresponding rejection in claim 8.

Regarding, **claim 23**, please refer to the corresponding rejection in claim 9.

Regarding, **claim 24**, please refer to the corresponding rejection in claim 10.

Regarding, **claim 25**, please refer to the corresponding rejection in claim 11.

Regarding, **claim 26**, please refer to the corresponding rejection in claim 12.

Regarding, **claim 27**, please refer to the corresponding rejection in claim 13.

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Regarding, **claim 29**, please refer to the corresponding rejection in claim 1, and further where Bone illustrates the block diagram of the hardware system to implement the embodiment of the invention, which reads on “a system”, (page 12, line 8, and lines 16-19).

***Allowable Subject Matter***

4. **Claims 5-6, 14, 19-20, 28, 33-34** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. **Claims 5, 19, and 33** are allowable to because of the activity of shielding. **Claims 6, 20, and 34** are allowable to because of the activity of dragging the color magnet. **Claims 14 and 28** are allowable for the anisotropic behavior.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Woolfe et al. US-PGPUB : 2003/0112454 A1, a gamut mapping for color images with regions of influence.

Gandele et al. US-PAT-NO : 6,594,388 B1, see figures 10-11, 16-18, 22, and 25 for enhancing hue and lightness characteristics of a digital color image.

Spaulding et al. US-PAT-NO: 5,539,540, gamut mapping a color image, see figure 2, 3, 5, 6, 19-25.

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Ellson et al. US-PAT-NO : 5,583,666, a method for subset gamut mapping into a color space with multi-dimensional look-up tables, see figures 9-11.

Huang et al. US-PAT-NO : 6,266,165 B1, a method of morphing n-dimensional data see figure 9-21.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie M Vida whose telephone number is (703) 306-4220. The examiner can normally be reached on 8:30 am 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A Williams can be reached on (703) 305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Melanie M Vida  
Examiner  
Art Unit 2626

MMV  
*mmv*

March 1, 2004

*KA Williams*  
**KIMBERLY WILLIAMS**  
**SUPERVISORY PATENT EXAMINER**